DOCUMENT RESUME

ED 355 222 SP 034 383

AUTHOR Spencer, Ronald; Martin, Oneida
TITLE The Effect of Teacher, Paraprofessional, and Peer Monitoring on Student Learning.
PUB DATE Nov 92
NOTE 11p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (Knoxville, TN, November 13, 1992).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Grade 7; Grade 8; *Helping Relationship; Junior High Schools; Junior High School Students; Learning Activities; Learning Strategies; Outcomes of Education; *Peer Teaching; Positive Reinforcement; Research Needs; *Student Role; *Teacher Aides; *Teacher Role; Teaching Methods
IDENTIFIERS *Monitoring

ABSTRACT

Teacher monitoring of seatwork and homework is viewed as an important instructional behavior that influences student learning. The literature suggests that monitoring can be equally successful utilizing other support systems, such as teacher aides and peer coaches. This study examines the effects of monitoring on student learning as provided by regular teachers, teacher aides, and peer helpers, and the effects of non-monitoring. Seventh-grade students (N=30) and eighth-grade students (N=13) were randomly selected from math classes and assigned to one of four groups. The first group was monitored by a teacher; the second group received peer assistance; in the third group students worked independently; and the fourth group was assigned to a paraprofessional. Data from pretests and posttests, daily grades, quiz grades, final test grades, and I.Q. scores were recorded, averaged, ranked, and compared within and between groups. A data summary indicates that achievement scores were the same whether students were monitored by teacher aides, peer coaches, or regular teachers, suggesting that peer coaches and paraprofessionals are a valuable resource for monitoring students' work. Little attention has been given to the nature of teachers' monitoring skills; further research should be conducted to identify effective monitoring behaviors. (LL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED355222

THE EFFECT OF TEACHER, PARAPROFESSIONAL, AND PEER MONITORING ON STUDENT LEARNING

Ronald Spencer
Coalfield High School

Oneida Martin
Tennessee Technological University

BEST COPY AVAILABLE

Paper presented at the annual meeting of Mid-South Educational Research Association, Knoxville, TN, November 13, 1992.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

O Martin

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

SP034383

Introduction

Teacher monitoring is viewed as an important instructional behavior that influences student learning. Many effective teaching models with the monitoring component have emerged from a plethora of research studies on effective teaching. These research studies have found that monitoring seatwork and homework assignments positively influence student achievement scores (Goldberg, 1985; Stalling, 1985)

As a result of the teacher monitoring findings, many states have developed and implemented instructional models with a monitoring component. To be an effective teacher, all teachers are expected to demonstrate monitoring behaviors. For example, the Tennessee Instructional Model (TIM) views monitoring as an element of instruction. Therefore, teachers are expected to allocate some classroom time by walking around to supervise students' on-tasks behaviors and to facilitate their practice learning opportunities.

The Problem

To a large degree, teachers have primarily been viewed as the facilitator of student learning and monitor of practice opportunities. This concept is due largely to effective teaching research that has focused on the teacher-student relationship in classrooms.

On the other hand, subsequent studies have found that monitoring behaviors of parents and self can also foster learning. That is, parent monitoring at home influences student achievement (Campbell, 1987; Mills, 1989). Tomarken & Kirschenbaum (1982) contend that positive self-monitoring can lead to successful outcomes when people are trained. What these studies strongly suggest is that other instructional support systems can be used to supervise and facilitate with the student

learning process.

Many classroom are equipped with paraprofessionals who assist with students and classroom activities, especially with special learning problems. In many cases, paraprofessionals are often viewed as the second teacher in the classroom. They frequently serve as monitors with various classroom activities. Yet, there seems to be a void in the literature concerning paraprofessionals in classroom settings. Little or no research has been conducted to examine the effects of paraprofessionals or teacher aides on student learning. Therefore, paraprofessionals are very seldom trained to perform the expected instructional behaviors as regular teachers are.

Purpose of the Study

The primary purpose of this study was to examine the effects of three types of monitoring sources on student learning. The three monitoring effects were the teacher, the teacher aide, and peer help. The study also examined the effect of no-monitoring help on student learning. The secondary purpose was to determine significant differences between the four groups of monitoring with the student learning.

Methodology

During the academic 1991-92 year, the experimental study was conducted during the second six-weeks grading period at a high school in East Tennessee. This grading period was selected because it had fewer interruptions, and the students were re-orientated to a new school year.

Forty-three seventh (N = 30) and eighth (N = 13) graders were randomly selected from math classes. With the sampled groups, two random procedures were necessary because two math classes had a large number of special education students. The first random sampling did not include special education students. A

sample of special education students were randomly selected from that particular population. This sampling procedure was used to avoid having too many special education students in one group or the other. It was important for the researchers to keep the groups equally distributed as possible.

Subsequently, the seventh and eighth graders were then randomly assigned to one of four groups. Group I was identified as Teacher Help; Group II as Peer Help; Group III as No Help, and Group IV as Aide Help. After students were assigned to one of the groups, the groups were then randomly matched with the style of monitoring that each would do throughout the experimental period.

Three monitors were selected for the study. Since one of the researchers was a teacher at the school, this researcher served as one monitor for the group. Chapter 1 aides served as monitors for another group. In one group, the students paired themselves off differently each day to monitor each other. The last group worked independently as self-monitors or without any monitoring.

Monitoring guidelines and instructions were given to all participants. The guidelines described how the monitoring of seatwork/homework would be conducted. Each group received the same instruction at the beginning of each class session. assignments were given for the seatwork/homework. Groups I, II, and IV received special monitoring guidance for performing their seatwork/homework.

Group I (teacher help) - After the seatwork/homework assignment is given, the teacher may then observe the student's work and help the student with problem areas in the assignment. The teacher will observe the student's work carefully, and reteach whatever is necessary.

Group 2 (peer help) - After the seatwork/homework assignment is given, the students may help each other by comparing their work, check for errors, and help each other with the understanding of the particular assignment. If one student observes that

another student is having difficulty with the assignment, he or she may help that student, or may ask for help from the teacher. The teacher may help the student with the problem with which the student is having difficulty, but no other assistance may be given.

Group III (no help) - After the seatwork/homework assignment is given, the students must work independently at his or her seatwork/homework assignment. However, the student may ask for help from the teacher, but the teacher will not initiate the help. After the teacher has assisted with the student, the teacher will not check for understanding of other encountered problems.

Group IV (aide help) - After the seatwork/assignment is given, the student will be monitored by the Chapter 1 paraprofessional. This teacher aide may observe the student's work and help with problem areas in the assignment. However, the paraprofessional may not help any other groups other than the group that is assigned to her.

After the guidelines had been given, each class was reassigned in their seating arrangement. The groups were then placed in areas where they would be sitting together. This arrangement was done in order to help the monitors with their accessibility to the students to whom they would be monitoring. Both monitors and those being monitored knew their tasks.

Each day the objective was stated and written on the board for the entire class. The class time was divided into two parts. During the first half on the class period, a lesson was taught from the objective. Upon instructional completion, the monitoring of the session began with the monitoring process. The monitoring process was used throughout the grading period and at the conclusion of a posttest.

Each student in each group had his/her work checked for understanding as he or she performed the assignment. The person who monitored the assignment could

offer suggestions for correcting the mathematics problem in which the student would be working. Group III worked independently without the assistance of a monitor. Each group member was responsible for completing the seatwcrk/homework assignment, and was responsible for having the assignment ready the next day of class.

With the experiments, weekly quizzes and a posttest were given. Individual records of achievement scores were maintained throughout the monitoring period. These records included daily grades, quiz grades, and the final six week's test grade. These grades were then averaged, ranked, and compared within and between groups. In addition, I.Q. scores for each student was recorded.

Data Results

The eighth grade class adapted to the experiment more quickly than the seventh grade class did. Perhaps this result was partially due to the eighth graders having more experiences in the junior high setting.

The initial phase of the study went smoothly; however, after a short period of time, only the eight grade class managed to stay on task throughout the experimental study. In addition, one seventh grader withdrew from school as the study was being conducted.

Descriptive, correlational, multiple regression, and one-way analysis of variance (ANOVA) were used to statistically analyze the monitoring effect of teacher, teacher aides, and peer on achievement scores. To test significant statistical monitoring and achievement score differences, the level of significance was set at .05.

Descriptive Summary

A descriptive summary of the data showed average mean achievement scores before and after monitoring behaviors. In fact, during the first six weeks before monitoring, achievement mean scores were higher than posttest scores with

monitoring. For example, the pretest mean score with daily grade (76.3), quiz (75.0), and test (78.3) was higher than the posttest scores in these areas. It was evident that monitoring did not increase achievement mean scores.

The Impact of Monitoring

When the data were analyzed for monitoring influences, there was hardly any correlation between any of the achievement scores and monitoring sources. For example, the coefficient value with monitoring and posttest scores was hardly visible ($r = .06$). Low coefficients also resulted with daily grades ($r = .09$) and quiz ($r = .04$). Perhaps these findings were partially due to inconsistent monitoring behaviors with one teacher aide, as well as the school's change with decreased instructional time.

Nevertheless, the data were further analyzed for significant correlations with achievement scores. It was observed that the three academic performance levels during both six weeks had high correlations. The high coefficient values with the pretest and posttest achievement scores could be observed. A significant correlation was found between pretest daily and test scores ($r = .75$, $p = .0000$) and quiz scores ($r = .57$, $p = .0002$). It was interesting also to observe the significant relationships between the first and second-six weeks. Daily scores during the first six weeks significantly influenced daily ($r = .68$) and test ($r = .67$) scores during the second six weeks. Similar findings were found with test1 and quiz2 scores ($r = .77$), test1 and test2 ($r = .79$). Expected significant correlations were found with I.Q. and achievement scores at all three performance levels.

Predictable Factors with Achievement

Multiple regressions procedures were used to determine the effect of monitoring on posttest achievement scores. Pretest achievement scores were also analyzed for their effect on posttest achievement scores.

It was expected that since earlier correlational findings with monitoring were low, there wouldn't be much effect on achievement. Multiple regression results confirmed monitors did not have an effect on any posttest achievement scores. Therefore, the monitoring behaviors of teacher, teacher aide, and peer could not predict the student achievement. On the other hand, the combined monitor effect with posttest achievement scores did produce high predictable effects. For example, monitor and daily posttest scores had a 34% effect on quiz scores, while monitor and daily scores could predict test scores 57% of the time. Monitoring behaviors and quiz scores only had a 28% effect on test scores.

The highest predictable effect on posttest achievement scores could easily be observed with pretest achievement scores. If the students scored high on their pretest daily, quiz, and test grades, the likelihood they would do well on posttest achievement scores. In fact, pretest scores had 64% effect on posttest daily grades, while pretest scores had a 65% effect on the test grades. The effect with posttest quiz grades was only 27%. Afterwards, the researchers decided to analyze grade level effect on pretest and posttest achievement scores. With pretest posttest scores, grade level had no effect. Yet, the combined grade effect with IQ, monitor, and pretest scores was high with posttest achievement scores. 77% of the variance found in posttest daily grades was explained by these factors. Student's daily grades, quiz, and test scores during the first six weeks without monitoring had the greatest beta effect on the posttest daily scores (R^2=.76). Only 44% of the variance in quiz2 was explained by the factors.

Pretest scores with daily, quiz, and test could also be predicted from grade, IQ, and monitoring scores. In fact, 67% of the variance found in the daily scores and 63% of the variance in quiz scores were explained by these scores. Test scores had the highest predictable value (R^2=.79) from these daily and quiz scores, grade level, IQ,

and monitor. Daily grades had the greatest beta effect (42%) on predicting test scores.

Monitoring Differences

Monitoring and achievement scores were also analyzed for statistical significant differences between student groups. First, monitoring group differences with posttest achievement scores were analyzed with one-way analysis of variance (ANOVA) and ANOVA with repeated measures. The results showed no significant monitoring group differences with posttest achievement scores.

With repeated measures of ANOVA, the monitoring group effect on posttest scores did not change. The various monitoring groups did not a significant effect with repeated measures of posttest scores. Achievement scores were the same with paraprofessional and peer help as with teacher help. These findings strongly suggest paraprofessionals and peer monitoring should be considered as valuable resources with student learning.

Conclusions

Although this study was limited in scope, there are some implications that paraprofessionals and peer help can facilitate regular teachers with student learning. If paraprofessionals are placed in classroom settings to facilitate teachers, it is evident that more research is needed to determine the classroom effects with teacher aides. This study has attempted to identify other available classroom resources that can assist teachers with shared instructional and monitoring time with students.

There is also some implication from the study that very little attention has been given to monitoring behaviors of teachers. What is known from research on effective teaching is that student learning increases with teachers who walk around to facilitate students with seatwork assignments. However, the specific monitoring behaviors with varied student abilities is unclear. The study suggest more research is needed to identify effective monitoring behaviors. When we understand how monitoring

behaviors can be effectively employed, parents can continue the process with student homework.

References

Campbell, J. R., & Mandel, F. (1987). Connecting math achievement to parental influences. *Contemporary Educational Psychology, 15,* 64-74.

Goldberg, L. (1989). *Implementing cooperative learning within six elementary school learning disability classrooms to improve math achievement and social skills.* Practicum, Nova University (ERIC Document Reproduction Service No. ED 262915).

Mills, J. (1989). *Increasing parental awareness of the importance of math homework for third grade students.* Practicum, Nova University (ERIC Document Reproduction Service No. ED 310921).

Stallings, J. (1985). *How effective is an analytic approach to staff development on teacher and student behavior?* George Peabody College for Teachers, Nashville, TN. (ERIC Document Reproduction Service No. ED 267019).

Tomarken, A., & Kirschenbaum, D. (1982). Self regulatory failure: Accentuate the positive? *Journal of Personality and Social Psychology,43,* 584-597.